

MAILED
5-6-13 JR

"Healthy environment, healthy people"

**Montana Department of
ENVIRONMENTAL QUALITY**

Steve Bullock, Governor
Tracy Stone-Manning, Director

P. O. Box 200901 • Helena, MT 59620-0901 • (406) 444-2544 • Website: www.deq.mt.gov

May 6, 2013

Mr. Pete Anderson
City of Helena
316 N. Park Avenue
Helena, MT 59623

RE: **CLOSED CITY OF HELENA CLASS II LANDFILL – LEWIS AND CLARK COUNTY – LICENSE #90**
RECEIVED – DATA VALIDATION AND STATISTICAL EVALUATION OF DECEMBER 2012 GROUNDWATER QUALITY DATA

Dear Mr. Anderson:

Thank you for submitting the December 2012 groundwater monitoring report for the closed City of Helena Class II Landfill in Lewis and Clark County, Montana. The groundwater monitoring report meets the requirements of the Administrative Rule of Montana Title 17, Chapter 50, Subchapter 13. Please consider the following comment:

- The reporting limits used for many parameters exceeded the required reporting values (RRVs) from Circular DEQ-7, Montana Numeric Water Quality Standards. Please have your laboratory use the RRVs from DEQ-7 for all future analyses.

The groundwater protection standard for Tetrachloroethene (PCE) continued to be exceeded in point of compliance well HL-10-1. The samples from this location have shown concentrations of PCE of 6 to 8.2 µg/L and the December 2012 result was the highest concentration yet observed at this well. Well HL-10-1 has also shown a consistent concentration higher than the up-gradient treatment system wells.

Incomplete capture of the contaminant plume due to seasonal operation of the groundwater extraction system remains a concern because PCE has not met the groundwater protection standards down-gradient from the facility after 13 years of operation of the groundwater extraction system.

The facility remains in corrective action with semi-annual monitoring at this time. If you have any questions or comments please contact me.

Sincerely,

Martin Van Oort
Environmental Science Specialist
Solid Waste Program
Phone: 406-444-2802, Fax: 406-444-1374
E-mail: mvanoort@mt.gov

cc: Ms. Jodi Bingham, Hydrometrics, Inc., 3020 Bozeman Ave., Helena, MT 59601

File: Closed\Lewis and Clark Co.\City of Helena Class II Landfill\License #90\Groundwater Monitoring

Correspondence Slip

Originator: MVO

Date Requested: 4/11/12

Date Needed By: 4/13/12

REVIEW
ROUTING

Name

Task

Initial/Date

Admin

Proof

Jh 12-11-12

Mary H

Review

Chelle 4-16

Bruce

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Rx 4-23-12

Rock

RT 4-24-12

Mail original via:

☒ Regular ☐ Certified ☐ Registered ☐ FedEx

Fax to addressee at:

Proof Path: G:\WUT_____

Mail copy of enclosures
to CC's? Y ☒ N

Special Instructions:

Copies of enclosures
for file needed? Y ☒ N

Copy of letter for file
needed? ☒ Y N

Email copies sent? Y ☒ N

EMAIL copy sent to Project Originator? Y N



**Montana Department of
ENVIRONMENTAL QUALITY**

MAILED
11-2-11 Jh

Brian Schweitzer, Governor
Richard H. Opper, Director

P.O. Box 200901 • Helena, MT 59620-0901 • (406) 444-2544 • www.deq.mt.gov

November 2, 2011

Mr. Pete Anderson
316 N. Park Avenue
Helena, MT 59623

RE: **CLOSED CITY OF HELENA CLASS II LANDFILL – LEWIS AND CLARK COUNTY – LICENSE #90
DATA VALIDATION AND STATISTICAL EVALUATION OF JUNE 2011 GROUNDWATER QUALITY
DATA**

Dear Mr. Anderson:

The Solid Waste Program (SWP) has reviewed the June 2011 groundwater monitoring report for the closed City of Helena Class II Landfill in Lewis and Clark County, Montana. The groundwater monitoring report meets the requirements of the Administrative Rule of Montana (ARM) Title 17, Chapter 50, Subchapter 13. The SWP provides the following comments for your consideration:

- The rule citations on page 1-1 are incorrect because ARM 17.50.708 has been repealed. Please change these citations to the current rules of ARM 17.50.1305(8) and ARM 17.50.1305(9) in future reports.

The SWP notes the continued exceedance of the Tetrachloroethene groundwater protection standard in the point of compliance well HL-10-1. Continued monitoring of this well will reveal the seasonal and longer term trends for organic compounds at this location.

The facility remains in corrective action with semi-annual monitoring at this time. If you have any questions or comments regarding this review, please contact me at the Permitting and Compliance Division, Waste and Underground Tank Management Bureau, Solid Waste Section.

Sincerely,

Martin Van Oort
Environmental Science Specialist
Solid Waste Program
Phone: 406-444-2802, Fax: 406-444-1374
E-mail: mvanoort@mt.gov

cc: Ms. Jodi Bingham, Hydrometrics, Inc., 3020 Bozeman Ave., Helena, MT 59601

File: Closed\Lewis and Clark Co.\City of Helena Class II Landfill\License #90\Groundwater Monitoring
Path: G:\WUT\SWS\GWater\Responses\Lewis & Clark Co\2011-06_cl_Helena_GW.docx

Correspondence Slip

Originator: MVO

Date Requested: 10/25/11

Date Needed By: 10/28/11

REVIEW
ROUTING

Name

Task

Initial/Date

Admin

Proof

JH 10-25

Mary H

Review

MLH 10-2

Bruce

↓

[Signature] 11-2-11

Rick

RT 11-1-11

Mail original via:

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Fax to addressee at:

Proof Path: G:\WUT\ SAA letter

Mail copy of enclosures
to CC's? Y ☒ N

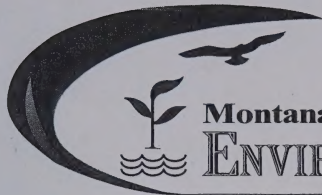
Special Instructions:

Copies of enclosures
for file needed? Y ☒ N

Copy of letter for file
needed? ☒ Y N

Email copies sent? Y ☒ N

EMAIL copy sent to Project Originator? Y N



Montana Department of
ENVIRONMENTAL QUALITY

MAILED
4-27-11

Brian Schweitzer, Governor
Richard H. Opper, Director

P.O. Box 200901 • Helena, MT 59620-0901 • (406) 444-2544 • www.deq.mt.gov

April 27, 2011

Mr. Ben Sautter
City of Helena
316 N. Park Avenue
Helena, MT 59623

RE: **CLOSED CITY OF HELENA CLASS II LANDFILL – LEWIS AND CLARK COUNTY – LICENSE #90**
DATA VALIDATION AND STATISTICAL EVALUATION OF DECEMBER 2010 GROUNDWATER QUALITY DATA

Dear Mr. Sautter:

The Solid Waste Program (SWP) has reviewed the December 2010 groundwater monitoring report for the closed City of Helena Class II Landfill in Lewis and Clark County, Montana. The groundwater monitoring report meets the requirements of the Administrative Rule of Montana (ARM) Title 17, Chapter 50, Subchapter 13. The SWP provides the following comments for your consideration:

- Field parameters were not recorded during purging of HL-90-1 to demonstrate stability prior to sampling. In the future, please ensure at least three measurements demonstrating field parameter stability are taken at each monitoring well that is sampled.
- The pH for the Nutrient samples from wells HL-06-1 and MPC-5 was >2 upon receipt by the laboratory. Please ensure all samples are properly preserved in future sampling events.
- The data for the trend analyses for pH and Chloride appear to contain erroneous non-detect values. In the future, please ensure that the data used for statistical analysis is correct.

The SWP notes the continued exceedance of the Tetrachloroethene groundwater protection standard in the point of compliance well HL-10-1. Continued monitoring of this well will reveal the seasonal and longer term trends for organic compounds at this location.

The facility remains in corrective action with semi-annual monitoring at this time. If you have any questions or comments regarding this review, please contact me at the Permitting and Compliance Division, Waste and Underground Tank Management Bureau, Solid Waste Section.

Sincerely,

Martin Van Oort
Environmental Science Specialist
Solid Waste Program
Phone: 406-444-2802, Fax: 406-444-1374
E-mail: mvanoort@mt.gov

cc: Ms. Jodi Bingham, Hydrometrics, Inc., 3020 Bozeman Ave., Helena, MT 59601

File: Closed\Lewis and Clark Co\City of Helena Class II Landfill\License #90\Groundwater Monitoring
Path: G:\WUTSWS\GWater\Responses\Lewis & Clark Co\2010-12_cl_Helena_GW.docx

Correspondence Slip

Originator: MVO

Date Requested: 4/25/11

Date Needed By: 4/27/11

REVIEW
ROUTING

Name

Task

Initial/Date

Admin

Proof

JA 4-25

Mary H

Review

ALB 4-25

Bruce

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STO 4-26-11

Rock

RT 4-26-11

Mail original via:

☒ Regular ☐ Certified ☐ Registered ☐ FedEx

Fax to addressee at:

Proof Path: G:\WUT\ see letter

Special Instructions:

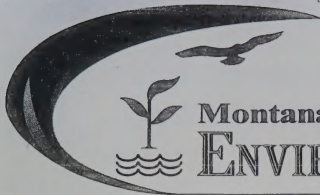
Mail copy of enclosures
to CC's? Y ☒ N

Copies of enclosures
for file needed? Y ☒ N

Copy of letter for file
needed? ☒ Y ☐ N

Email copies sent? Y ☒ N

EMAIL copy sent to Project Originator? Y ☐ N



Montana Department of
ENVIRONMENTAL QUALITY

P.O. Box 200901 • Helena, MT 59620-0901 • (406) 444-2544 • www.deq.mt.gov

MAILED
11-10-10 Jh

Brian Schweitzer, Governor
Richard H. Opper, Director

November 10, 2010

Mr. Ben Sautter
City of Helena
316 N. Park Avenue
Helena, MT 59623

RE: **CLOSED CITY OF HELENA CLASS II LANDFILL – LEWIS AND CLARK COUNTY – LICENSE #90**
DATA VALIDATION AND STATISTICAL EVALUATION OF JUNE 2010 GROUNDWATER QUALITY DATA

Dear Mr. Sautter:

The Department has reviewed the “Data Validation and Statistical Evaluation of June 2010 Groundwater Quality Data” for the closed City of Helena Class II Landfill in Lewis and Clark County, Montana. The groundwater sampling report meets the requirements of the Administrative Rule of Montana (ARM) Title 17, Chapter 50, Subchapter 13. The Department provides the following comments for your consideration:

- The Rules cited on page 1-1 of the report have been repealed. The rules regarding statistical analyses are now located in ARM 17.50.1305(8) and ARM 17.50.1305(9).
- According to the field sheets, the DI Blank and Rinsate Blank were collected “In Lab.” A blank sample collected off site may not contain contaminants introduced to the other samples on site, or contain contaminants not present on site. Either of these occurrences could result in misinterpretation of the analytical results. In the future, please collect the DI Blank and Rinsate Blank in the field during routine sampling to maintain QA/QC integrity.

The Department notes the exceedance of the Tetrachloroethene (PCE) groundwater protection standard in the new point of compliance well HL-10-1. Continued monitoring of this well will reveal the seasonal and longer term trends for organic compounds at this location.

The facility remains in corrective action with semi-annual monitoring at this time. If you have any questions or comments regarding this review, please contact me at the Permitting and Compliance Division, Waste and Underground Tank Management Bureau, Solid Waste Section.

Sincerely,

Martin Van Oort
Environmental Science Specialist
Solid Waste Program
Phone: 406-444-2802, Fax: 406-444-1374
E-mail: mvanoort@mt.gov

cc: Ms. Jodi Bingham, Hydrometrics, Inc., 3020 Bozeman Ave., Helena, MT 59601

File: Closed\Lewis and Clark Co.\City of Helena Class II Landfill\License #90\Groundwater Monitoring
Path: G:\WUTSWS\GWaterResponses\Lewis & Clark Co\2010-06_cl_Helena_GW.doc

Correspondence Slip

Originator: MVO

Date Requested: 11/8/10

Date Needed By: 11/12/10

REVIEW
ROUTING

Name

Task

Initial/Date

Admin

Proof

Jh 11-8-10

Marg H

Review

Bel 11-10-10

Darrell

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Das 11/10/10

Breck

BT 11-10-10

Mail original via:

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Fax to addressee at:

Proof Path: G:\WUT\ spa letter

Special Instructions:

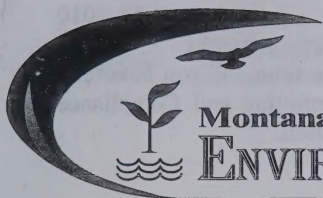
Mail copy of enclosures
to CC's? Y ☒ N

Copies of enclosures
for file needed? Y ☒ N

Copy of letter for file
needed? ☒ Y N

Email copies sent? Y ☒ N

EMAIL copy sent to Project Originator? Y N



Montana Department of
ENVIRONMENTAL QUALITY

MAILED

4-30-10 *Sh*

Brian Schweitzer, Governor
Richard H. Opper, Director

P.O. Box 200901 • Helena, MT 59620-0901 • (406) 444-2544 • www.deq.mt.gov

April 29, 2010

Mr. Ben Sautter
City of Helena
316 N. Park Avenue
Helena, MT 59623

**RE: CLOSED CITY OF HELENA CLASS II LANDFILL – LEWIS AND CLARK COUNTY – LICENSE #90
DATA VALIDATION AND STATISTICAL EVALUATION OF DECEMBER 2009 GROUNDWATER
QUALITY DATA**

Dear Mr. Sautter:

The Department has reviewed the Data Validation and Statistical Evaluation of December 2009 Groundwater Quality Data for the closed City of Helena Class II Landfill in Lewis and Clark County, Montana. The groundwater monitoring report meets the requirements of Administrative Rule of Montana (ARM) 17.50.708. The Department provides the following comment for your consideration:

- As noted in the report, all samples were received by the laboratory either frozen or partially frozen. Freezing of samples can affect the results of analyses and can cause breakage of sample containers. Please take care in handling the samples during future winter sampling events to prevent freezing of the samples.

The Department notes the exceedance of the Tetrachloroethene (PCE) groundwater protection standard in point of compliance well HL-90-1. The continued exceedances of the groundwater protection standard down-gradient of the groundwater extraction system remain a concern to the Department. Given the groundwater flow velocities in the area and the fact that the groundwater extraction system has been operating for nearly ten years, some improvement in groundwater quality in the down-gradient off-site wells should be expected. The apparent lack of improvement in water quality down-gradient of the facility may indicate that the seasonal operation of the groundwater extraction system is not achieving full capture of the PCE plume.

Because of its shallow depth and proximity to the groundwater extraction system wells, monitoring well HL-90-1 is typically dry and can not be sampled while the extraction wells are in operation. A monitoring well which regularly can not be sampled does not provide a reliable point of compliance monitoring location. Additionally, the minimal water volume present in the well when it can be sampled prevents the use of standard monitoring well purging procedures. Please install a well near the location of HL-90-1 and drilled to approximately the same depth as the groundwater extraction wells, which would provide a more reliable point of compliance well. Please submit a work plan for the installation of the new well to the Department by June 28, 2010.

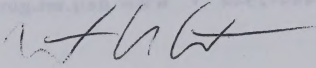
Mr. Ben Sautter

-2-

April 29, 2010

MAILED
The facility remains in corrective action with semi-annual monitoring at this time. If you have any questions or comments regarding this review, please contact me at the Permitting and Compliance Division, Waste and Underground Tank Management Bureau, Solid Waste Section.

Sincerely,



Martin Van Oort
Environmental Science Specialist
Solid Waste Program
Phone: 406-444-2802, Fax: 406-444-1374
E-mail: mvanoort@mt.gov

cc: Ms. Jodi Bingham, Hydrometrics, Inc., 3020 Bozeman Ave., Helena, MT 59601

File: Closed\Lewis and Clark Co.\City of Helena Class II Landfill\License #90\Groundwater Monitoring
Path: G:\WUTSWS\GWater\Responses\Lewis & Clark Co\2009-12_cl_Helena_GW.doc

Closed
County Lewis and Clark
Facility & # City of Helena #90
Closure Landfarm
Finan Assur Liner
GW Corr Meas Methane
GW Monitoring O & M
GW Reports Run-on
Inspections
Other: _____

Correspondence Slip		Project ID:	
Requested:	<u>4/26/10</u>	Needed By:	<u>4/28/10</u>
Originator:	<u>MVO</u>	Org(s)/Mail Code:	
REVIEW ROUTING	Name	Task	Initial/Date
	<u>Admin</u>	<u>Proof</u>	<u>SA, 4/26</u>
	<u>Margy H</u>	<u>Review</u>	<u>Melle, 4/27</u>
	<u>Danall</u>	<u>Review</u>	<u>Gas, 4/28</u>
	<u>Rick</u>	<u>Review</u>	<u>RT, 4-29-2010</u>
Mail original via: ☒ Regular ☐ Certified ☐ Registered ☐ FedEx		Fax to addressee at:	
Proof Path: G:\WUT\ <u>See letter</u>		Mail copy of enclosures to CC's? Y ☐ N ☒	
Special Instructions:		Copies of enclosures for file needed? Y ☐ N ☒	
		Copy of letter for file needed? Y ☒ N ☐	



Hydrometrics, Inc.
consulting scientists and engineers

3020 Bozeman Avenue
Helena, MT 59601
(406) 443-4150
Fax: (406) 443-4155
www.hydrometrics.com

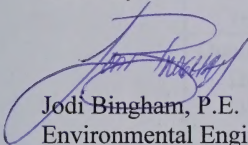
November 20, 2012

Mr. Martin Van Oort
Environmental Science Specialist
Solid Waste Regulatory Program
Montana Department of Environmental Quality
P.O. Box 200901
Helena, MT 59620-0901

Dear Martin,

Enclosed for your review are the proposed monitoring sites and analytical schedule for the December 2012 semiannual groundwater monitoring at the Helena Landfill. Water level measurements will be obtained from several additional monitoring wells to ensure an accurate potentiometric surface map can be established. This sampling regime is as listed in the approved "Revised Sampling and Analysis Plan, City of Helena Landfill, Groundwater, Surface Water, and Landfill Gas Monitoring Activities" (Hydrometrics, 2008). Sampling personnel will be attempting to sample the week of December 10, 2012. Please call if you have any questions or comments.

Sincerely,



Jodi Bingham, P.E.
Environmental Engineer/Chemist

c: John Rundquist, City of Helena
Pete Anderson, City of Helena
Mike Wignot, Hydrometrics

 **RECEIVED**

NOV 23 2012

DEPT. OF ENVIRO. QUALITY
WASTE & UNDERGROUND TANK
MANAGEMENT BUREAU

**HELENA LANDFILL
DECEMBER 2012 SAMPLE SITE AND PARAMETER LIST**

Site Name	Parameter
Monitoring Wells ⁽¹⁾	
INF. GALLERY	Water level only
EPA-2	Water level only
EPA-4	Water level only
MPC-2	Water level only
HL-90-2	Water level only
HL-94-1R	Table 1
HL-94-3	Water level only
HL-06-1	Table 1
HL-90-3	Water level only
HL-94-2R	Water level only
I-1	Water level only
HL-99-1	Table 1
HL-99-2	Table 1
HL-90-1	Table 1
HL-10-1	Table 1
HL-99-3	Table 1
MPC-1	Water level only
EPA-1	Water level only
MPC-5	Table 1
Residential Wells:	
5	Table 1 VOC's only
16	Table 1 VOC's only
Quality Control:	
Duplicate (HL-10-1)	Table 1
DI Blank	Table 1
Trip Blank	Table 1
Rinsate Blank	Table 1

(1) Monitoring wells are listed in the order to be sampled.

RECEIVED

NOV 23 2012

DEPT. OF ENVIRO. QUALITY
WASTE & UNDERGROUND TANK
MANAGEMENT BUREAU

Closed

County Lewis and Clark

Facility & # City of Helena #19

Closure Landfarm

Finan Assur Liner

GW Corr Meas Methane

GW Monitoring O & M

GW Reports Run-on

Inspections

Other: _____



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consulting scientists and engineers

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JUN 0 2012

Dept. of Environment & Natural Resources
Waste & Underground
Tank Management Bureau

3020 Bozeman Avenue
Helena, MT 59601
(406) 443-4150
Fax: (406) 443-4155
www.hydrometrics.com

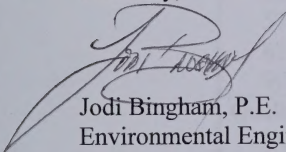
June 1, 2012

Mr. Martin Van Oort
Environmental Science Specialist
Solid Waste Regulatory Program
Montana Department of Environmental Quality
P.O. Box 200901
Helena, MT 59620-0901

Dear Martin,

Enclosed for your review are the proposed monitoring sites and analytical schedule for the June 2012 semiannual groundwater monitoring at the Helena Landfill. Water level measurements will be obtained from additional monitoring wells to ensure an accurate potentiometric surface map can be established. This sampling regime is as listed in the approved Revised Sampling and Analysis Plan, City of Helena Landfill, Groundwater, Surface Water, and Landfill Gas Monitoring Activities (Hydrometrics, 2008). Sampling personnel will be attempting to sample the week of June 11, 2012. Please call if you have any questions or comments.

Sincerely,



Jodi Bingham, P.E.
Environmental Engineer/Chemist

c: John Rundquist, City of Helena
Pete Anderson, City of Helena
Mike Wignot, Hydrometrics



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consulting scientists and engineers

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Helena, MT 59601
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Fax: (406) 443-4155
www.hydrometrics.com

HELENA LANDFILL JUNE 2012 SAMPLE SITE AND PARAMETER LIST

Site Name	Parameter
Monitoring Wells ⁽¹⁾	
INF. GALLERY	Table 1 VOC's only
MPC-2	Table 1 VOC's only
HL-90-2	Table 1
HL-94-1R	Table 1
HL-94-3	Table 1
HL-06-1	Table 1
HL-90-3	Table 1
HL-94-2R	Table 1
HL-99-1	Table 1
HL-99-2	Table 1
HL-10-1	Table 1
HL-99-3	Table 1
MPC-1	Table 1
I-4	Table 1 VOC's only
EPA-1	Table 1
MPC-5	Table 1
Residential Wells:	
5	Table 1 VOC's only
16	Table 1 VOC's only
40	Table 1 VOC's only
48	Table 1 VOC's only
52	Table 1 VOC's only
57	Table 1 VOC's only
62	Table 1 VOC's only
90	Table 1 VOC's only
Quality Control:	
Duplicate (HL-90-3)	Table 1
D.I. Blank	Table 1
Trip Blank	Table 1
Rinseate Blank	Table 1

(1) Monitoring wells are listed in the order to be sampled.

AI
RECEIVED

JUN 06 2012

DEPT. OF ENVIRO. QUALITY
WASTE & UNDERGROUND TANK
MANAGEMENT BUREAU

Closed

County Lewis and Clark

Facility & # City of Helena #20

Closure Landfarm

Finan Assur Liner

GW Corr Meas Methane

GW Monitoring O & M

GW Reports Run-on

Inspections

Other: _____

Van Oort, Martin

From: Jodi Bingham [JBINGHAM@hydrometrics.com]
Sent: Wednesday, September 14, 2011 2:27 PM
To: panderson@ci.helena.mt.us
Cc: Van Oort, Martin
Subject: Cyanide sampling at Golf Course pond

Pete-
As you know, due to increased cyanide results in the groundwater extraction system wells during the June sampling, we decided to sample both the golf course pond and golf course sprinkler for cyanide. I received the results today and both samples were non detect for cyanide. Please contact me if you have any questions.

Sincerely,

Jodi Bingham, P.E.
Hydrometrics, Inc.
3020 Bozeman Ave.
Helena, MT 59602
(406) 443-4150 x172
jbingham@hydrometrics.com

...the proposed monitoring sites and associated activities for the ...
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[Handwritten signature]
Jodi Bingham, P.E.
Environmental Engineer
John Bingham, City of Helena
Don Sanders, City of Helena
Mike Wignall, City of Helena

RECEIVED
SEP 15 2011
CITY OF HELENA

closed

County Louis & Clark

Facility & # City of Helena #90

Closure Landfarm

Finan Assur Liner

GW Corr Meas Methane

GW Monitoring O & M

GW Reports Run-on

Inspections

Other: _____



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consulting scientists and engineers

3020 Bozeman Avenue
Helena, MT 59601
(406) 443-4150
Fax: (406) 443-4155
www.hydrometrics.com

May 17, 2011

Mr. Martin Van Oort
Environmental Science Specialist
Solid Waste Regulatory Program
Montana Department of Environmental Quality
P.O. Box 200901
Helena, MT 59620-0901

Dear Martin,

Enclosed for your review are the proposed monitoring sites and analytical schedule for the June 2011 semiannual groundwater monitoring at the Helena Landfill. Water level measurements will be obtained from additional monitoring wells to ensure an accurate potentiometric surface map can be established. This sampling regime is as listed in the approved Revised Sampling and Analysis Plan, City of Helena Landfill, Groundwater, Surface Water, and Landfill Gas Monitoring Activities (Hydrometrics, 2008). Sampling personnel will be attempting to sample the week of June 13, 2011. Please call if you have any questions or comments.

Sincerely,

Jodi Bingham, P.E.
Environmental Engineer/Chemist

c: John Rundquist, City of Helena
Ben Sautter, City of Helena
Mike Wignot, Hydrometrics

RECEIVED

MAY 18 2011

Dept. of Enviro. Qual.
Waste & Underground
Tank Management Bureau

TABLE 1: SAMPLE SIZE AND PARAMETER ESTIMATE

Parameter	Sample Size
Table 1: VOC's only	10
Table 2: VOC's only	10

Table 1: VOC's only

Monitoring Wells (M)

DR GALLERY

Table 1: VOC's only
 Table 2: VOC's only
 Table 3: VOC's only
 Table 4: VOC's only
 Table 5: VOC's only
 Table 6: VOC's only
 Table 7: VOC's only

10
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MAY 18 2011

Hydramatics, Inc.
 10000 Highway 101, Suite 100
 San Diego, CA 92126
 (619) 444-1111

**HELENA LANDFILL
JUNE 2011 SAMPLE SITE AND PARAMETER LIST**

Site Name	Parameter
Monitoring Wells ⁽¹⁾	
INF. GALLERY	Table 1 VOC's only
MPC-2	Table 1 VOC's only
HL-90-2	Table 1
HL-94-1R	Table 1
HL-94-3	Table 1
HL-06-1	Table 1
HL-90-3	Table 1
HL-94-2R	Table 1
HL-99-1	Table 1
HL-99-2	Table 1
HL-10-1	Table 1
HL-99-3	Table 1
MPC-1	Table 1
I-4	Table 1 VOC's only
EPA-1	Table 1
MPC-5	Table 1
Residential Wells:	
5	Table 1 VOC's only
16	Table 1 VOC's only
40	Table 1 VOC's only
48	Table 1 VOC's only
52	Table 1 VOC's only
57	Table 1 VOC's only
62	Table 1 VOC's only
90	Table 1 VOC's only
Quality Control:	
Duplicate (HL-90-3)	Table 1
D.I. Blank	Table 1
Trip Blank	Table 1
Rinseate Blank	Table 1

(1) Monitoring wells are listed in the order to be sampled.

Closed

County Lewis & Clark

Facility & # City of Helena #

Closure

Landfarm

Finan Assur

Liner

GW Corr Meas

Methane

GW Monitoring

O & M

GW Reports

Run-on

Inspections

Other: _____



Hydrometrics, Inc.
consulting scientists and engineers

3020 Bozeman Avenue
Helena, MT 59601
(406) 443-4150
Fax: (406) 443-4155
www.hydrometrics.com

November 16, 2010

Mr. Martin Van Oort
Environmental Science Specialist
Solid Waste Regulatory Program
Montana Department of Environmental Quality
P.O. Box 200901
Helena, MT 59620-0901

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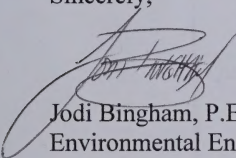
NOV 17 2010

DEPT. OF ENVIRO. QUALITY
WASTE & UNDERGROUND TANK
MANAGEMENT BUREAU

Dear Martin,

Enclosed for your review are the proposed monitoring sites and analytical schedule for the December 2010 semiannual groundwater monitoring at the Helena Landfill. Water level measurements will be obtained from several additional monitoring wells to ensure an accurate potentiometric surface map can be established. This sampling regime is as listed in the approved "Revised Sampling and Analysis Plan, City of Helena Landfill, Groundwater, Surface Water, and Landfill Gas Monitoring Activities" (Hydrometrics, 2008). Sampling personnel will be attempting to sample the week of December 6, 2010. Please call if you have any questions or comments.

Sincerely,


Jodi Bingham, P.E.
Environmental Engineer/Chemist

c: John Rundquist, City of Helena
Ben Sautter, City of Helena
Mike Wignot, Hydrometrics

HELENA LANDFILL **DECEMBER 2010 SAMPLE SITE AND PARAMETER LIST**

Site Name	Parameter
Monitoring Wells ⁽¹⁾	
INF. GALLERY	Water level only
82-3	Water level only
EPA-2	Water level only
EPA-4	Water level only
MPC-2	Water level only
HL-90-2	Water level only
HL-94-1	Table 1
HL-94-3	Water level only
HL-06-1	Table 1
HL-90-3	Water level only
HL-94-2R	Water level only
I-1	Water level only
HL-99-1	Table 1
HL-99-2	Table 1
HL-90-1	Table 1
HL-10-1	Table 1
HL-99-3	Table 1
MPC-1	Water level only
EPA-1	Water level only
MPC-5	Table 1
Residential Wells:	
5	Table 1 VOC's only
16	Table 1 VOC's only
Quality Control:	
Duplicate (HL-90-1)	Table 1
DI Blank	Table 1
Trip Blank	Table 1
Rinsate Blank	Table 1

(1) Monitoring wells are listed in the order to be sampled.



Hydrometrics, Inc.

consulting scientists and engineers

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(406) 443-4150
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June 2, 2010

Mr. Martin Van Oort
Environmental Science Specialist
Waste Regulatory Program
Department of Environmental Quality

Closed

County <i>Lewis & Clark</i>	
Facility & # <i>City of Helena #80</i>	
Closure	
Finan Assur	Landfarm
GW Corr Meas	Liner
<u>GW Monitoring</u>	Methane
GW Reports	O & M
Inspections	Run-on
Other: _____	

The proposed monitoring sites and analytical schedule for the groundwater monitoring at the Helena Landfill. Water level data will be collected from several additional monitoring wells to ensure an accurate map can be established. This sampling regime is as listed in the Sampling and Analysis Plan, City of Helena Landfill, Groundwater, Gas Monitoring Activities (Hydrometrics, 2008). Sampling will be conducted to sample the week of June 14, 2010. Please call if you have

any questions.

Sincerely,

Jodi Bingham, P.E.
Environmental Engineer/Chemist

c: John Rundquist, City of Helena
Ben Sautter, City of Helena
Mike Wignot, Hydrometrics

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JUN 03 2010

Dept. of Enviro. Quality
Waste & Underground
Tank Management Bureau

**HELENA LANDFILL
JUNE 2010 SAMPLE SITE AND PARAMETER LIST**

Site Name	Parameter
Monitoring Wells ⁽¹⁾	
INF. GALLERY	Table 1 VOC's only
MPC-2	Table 1 VOC's only
HL-90-2	Table 1
HL-94-1R	Table 1
HL-94-3	Table 1
HL-06-1	Table 1
HL-90-3	Table 1
HL-94-2R	Table 1
I-1	Water Level Only
HL-99-1	Table 1
HL-99-2	Table 1
HL-10-1	Table 1
HL-99-3	Table 1
MPC-1	Table 1
I-4	Table 1 VOC's only
EPA-1	Table 1
MPC-5	Table 1
Residential Wells:	
5	Table 1 VOC's only
16	Table 1 VOC's only
40	Table 1 VOC's only
48	Table 1 VOC's only
52	Table 1 VOC's only
57	Table 1 VOC's only
62	Table 1 VOC's only
90	Table 1 VOC's only
Quality Control:	
Duplicate (HL-90-3)	Table 1
D.I. Blank	Table 1
Trip Blank	Table 1
Rinsate Blank	Table 1

(1) Monitoring wells are listed in the order to be sampled.

RECEIVED

JUN 03 2010

Dept. of Enviro. Quality
Waste & Underground
Risk Management Bureau

